

REMARKS

Claims 1, 2, 6-8, 18, 21 and 22 are rejected under 35 USC 103(a) as being unpatentable over Kazumasa, corresponding to JP2002-026450 in view of Ohkubo, U.S. Patent Application No. 2002/0126723.

Claim 1 recites “wherein a portion of said active layer in an area near a laser resonator end face has a peak wavelength in photoluminescence that is smaller than a peak wavelength in photoluminescence in a portion of said active layer in a laser resonator inner area and contains impurity atoms having the second conductivity, contained in the second clad layer of the second conductivity type.” Kazumasa fails to teach or suggest this feature.

Kazumasa forms a window area with impurity atoms (As atoms) which are ion-implanted. In the claimed invention, the impurity atoms having the second conductivity type (Be atoms) contained in the second clad layer form a window area.

Further, claim 1 recites “impurity atoms having the second conductivity, contained in the second clad layer of the second conductivity type in the area near a laser resonator end face, are the same as impurity atoms having the second conductivity contained in the second clad layer of the second conductivity type in the laser resonator inner area, and the impurity atoms having the second conductivity, contained in the second clad layer of the second conductivity type in the area near a laser resonator end face and the laser resonator inner area, are II-group atoms that have an atomic number smaller than the atomic number of P.”

The Examiner admits that Kazumasa fails to teach or suggest this feature, but asserts that Ohkubo teaches “a similar disordered region device wherein the entire second clad layer is doped with Be” and that it would have been obvious to have modified Kazumasa to prevent overflow of carriers from the active layer and improve crystallinity of the active layer (citing paragraph [0231]). Applicants respectfully disagree.

First, Ohkubo's second clad layer is a p-type $\text{Al}_x\text{Ga}_{1-x}\text{In}_z\text{P}$ layer which contains Be atoms which belong to II group atoms. Ohkubo merely states that the second clad layer "contains" Be atoms, but does not specifically recite that the impurity atoms are "in the area near a laser resonator end face" or "in the laser resonator inner area." Further, paragraph [0231] of Ohkubo states that the results discussed in the preceding paragraph is attributed to the first annealing process . . . which uniforms a distribution of Be atoms belonging to II group atoms in the region in the vicinity of the active layer (layer 404 in Fig. 10A). Thus, the achieved results are due to the fact that the Be atoms are uniformly distributed in the region in the vicinity of the active layer. Thus, even if combined, Ohkubo would have motivated one of ordinary skill in the art to have modified Kazumasa to uniform a distribution of Be atoms belonging to II group atoms in the region in the vicinity of the active layer. This is not the claimed invention. Thus, one of ordinary skill in the art would not have been motivated to modify Kazumasa in view of the teachings of Ohkubo to create the claimed invention.

The remaining claims are allowable at least due to their respective dependencies.
Applicants request that this rejection be withdrawn.

Claims 1 and 9 are rejected under 35 USC 103(a) as being unpatentable over Kiyohisa in view of Ohkubo.

The arguments made above with respect to Kazumasa apply to this rejection as well. One of ordinary skill in the art would not have been motivated to modify Kiyohisa in view of the teachings of Ohkubo to create the claimed invention. Applicants request that this rejection be withdrawn for the foregoing reasons.

Claims 3 and 19 are rejected under 35 USC 103(a) as being unpatentable over Kazumasa and Ohkubo in view of Ueno (EPO 0437243A2).

Claims 3 and 19 are allowable for the reasons set forth above and further in view of Ueno's failure to overcome the deficiencies of Kazumasa and Ohkubo. Applicants request that this rejection be withdrawn for the foregoing reasons.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 204552031400.

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